

**THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OF PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:**

1. A method for isolating a harvest-inducible DNA sequence comprising:
  - i) constructing one, or more than one, first cDNA libraries comprising cDNA sequences expressed in harvested tissue;
  - ii) preparing one, or more than one, second cDNA libraries comprising cDNA sequences expressed in tissues of an intact plant prior to harvest; and
  - iii) identifying the harvest-inducible cDNA sequence present in the one, or more than one, first cDNA library that is not present in the second cDNA library.
2. An isolated harvest-inducible cDNA sequence obtained according to the method of claim 1.
3. An isolated harvest-inducible cDNA sequence selected from the group consisting of:
  - i) SEQ ID NO:1, a complement thereof, a fragment of SEQ ID NO:1, a complement of a fragment of SEQ ID NO:1, a nucleic acid that hybridizes to SEQ ID NO:1 under stringent hybridization conditions, a nucleic acid that hybridizes to a complement of SEQ ID NO:1 under stringent hybridization conditions, a nucleic acid that hybridizes to a fragment of SEQ ID NO:1 under stringent hybridization conditions, or a nucleic acid that hybridizes to a complement of fragment of SEQ ID NO:1 under stringent hybridization conditions;
  - ii) SEQ ID NO:2, a complement thereof, a fragment of SEQ ID NO:2, a complement of a fragment of SEQ ID NO:2, a nucleic acid that hybridizes to SEQ ID NO:2 under stringent hybridization conditions, a nucleic acid that hybridizes to a complement of SEQ ID NO:2 under stringent hybridization conditions, a nucleic acid that hybridizes to a fragment of SEQ ID NO:2 under stringent hybridization conditions, or a nucleic acid that hybridizes to a complement of fragment of SEQ ID NO:2 under stringent hybridization conditions; and
  - iii) SEQ ID NO:3, a complement thereof, a fragment of SEQ ID NO:3, a complement of a fragment of SEQ ID NO:3, a nucleic acid that hybridizes to SEQ ID NO:3 under stringent hybridization conditions, a nucleic acid that hybridizes to a complement of SEQ ID NO:3 under stringent hybridization conditions, a nucleic acid

that hybridizes to a fragment of SEQ ID NO:3 under stringent hybridization conditions, or a nucleic acid that hybridizes to a complement of fragment of SEQ ID NO:3 under stringent hybridization conditions,

the stringent hybridization conditions comprising, hybridization overnight (12-24 hrs) at 42°C in the presence of 50% formamide, followed by washing, or 5X SSC at about 65°C for about 12 to about 24 hours, followed by washing in 0.1X SSC at 65°C for about one hour.

4. A method for isolating a harvest inducible regulatory element comprising,
  - i) identifying genomic DNA sequences 3' and 5' corresponding to the harvest-inducible cDNA identified using the method of claim 1; and
  - ii) analyzing the genomic DNA, and identifying the harvest-inducible regulatory element.
5. The method of claim 4 further comprising a step of:
  - iii) testing said harvest-inducible regulatory region within a transgenic plant or plant cell.
6. A harvest-inducible regulatory element obtained using the method of claim 4.
7. A harvest-inducible regulatory element selected from the group consisting of:
  - i) SEQ ID NO:4, a complement thereof, a fragment of SEQ ID NO:4, a complement of a fragment of SEQ ID NO:4, a nucleic acid that hybridizes to SEQ ID NO:4 under stringent hybridization conditions, a nucleic acid that hybridizes to a complement of SEQ ID NO:4 under stringent hybridization conditions, a nucleic acid that hybridizes to a fragment of SEQ ID NO:4 under stringent hybridization conditions, or a nucleic acid that hybridizes to a complement of fragment of SEQ ID NO:4 under stringent hybridization conditions;
  - ii) SEQ ID NO:5, a complement thereof, a fragment of SEQ ID NO:5, a complement of a fragment of SEQ ID NO:5, a nucleic acid that hybridizes to SEQ ID NO:5 under stringent hybridization conditions, a nucleic acid that hybridizes to a complement of SEQ ID NO:5 under stringent hybridization conditions, a nucleic acid that hybridizes to a fragment of SEQ ID NO:5 under stringent hybridization

conditions, or a nucleic acid that hybridizes to a complement of fragment of SEQ ID NO:5 under stringent hybridization conditions; and

iii) SEQ ID NO:6, a complement thereof, a fragment of SEQ ID NO:6, a complement of a fragment of SEQ ID NO:6, a nucleic acid that hybridizes to SEQ ID NO:6 under stringent hybridization conditions, a nucleic acid that hybridizes to a complement of SEQ ID NO:6 under stringent hybridization conditions, a nucleic acid that hybridizes to a fragment of SEQ ID NO:6 under stringent hybridization conditions, or a nucleic acid that hybridizes to a complement of fragment of SEQ ID NO:6 under stringent hybridization conditions,

the stringent hybridization conditions comprising, hybridization overnight (12-24 hrs) at 42°C in the presence of 50% formamide, followed by washing, or 5X SSC at about 65°C for about 12 to about 24 hours, followed by washing in 0.1X SSC at 65°C for about one hour, wherein the regulatory element exhibits harvest-inducible activity.

8. A construct comprising said harvest-inducible regulatory element of claim 7, operably linked with a heterologous coding sequence of interest and a terminator region.

9. A construct comprising a heterologous coding sequence operably linked to the harvest-inducible regulatory element of claim 7, the harvest-inducible regulatory element further comprising a nucleotide sequence encoding a harvest-inducible protein or fragment thereof.

10. A vector comprising the DNA construct of claim 8.

11. A vector comprising the DNA construct of claim 9.

12. A plant, plant tissue, plant seed, plant cell, or progeny therefrom, comprising the construct of claim 8.

13. A plant, plant tissue, plant seed, plant cell, or progeny therefrom, comprising the construct of claim 9.

14. A method for production of a heterologous protein in a plant comprising:

i) providing a plant transformed with the construct of claim 8;  
ii) growing the transformed plant; and  
iii) harvesting the transformed plant thereby inducing expression of the heterologous protein.

15. The method of claim 14, wherein the step of harvesting (step iii) is followed by:

iv) isolating the heterologous protein from the transformed plant.

16. The method of claim 15, wherein the step of isolating (step iv)) is followed by a step of purification of the heterologous protein.

17. A method for production of a heterologous protein in a plant comprising,

i) providing a plant transformed with the construct of claim 9;  
ii) growing the transformed plant; and  
iii) harvesting the transformed plant to induce expression of the heterologous protein.

18. The method of claim 17, wherein the step of harvesting (step iii) is followed by:

iv) isolating the heterologous protein from the transformed plant.

19. The method of claim 18, wherein the step of isolating (step iv)) is followed by a step of purification of the heterologous protein.

20. A method for production of a heterologous protein in a plant comprising:

i) providing a plant expressing the construct of claim 8;  
ii) growing the plant; and  
iii) harvesting the plant thereby inducing expression of the heterologous protein.

21. A method for production of a heterologous protein in a plant comprising,

i) providing plant expressing the construct of claim 9;  
ii) growing transformed plant; and

iii) harvesting the plant to induce expression of the heterologous protein.

22. A harvest inducible regulatory element according to claim 7, wherein the harvest inducible regulatory element is SEQ ID NO:4.

23. A harvest inducible regulatory element according to claim 7, wherein the harvest inducible regulatory element is SEQ ID NO:5.

24. A harvest inducible regulatory element according to claim 7, wherein the harvest inducible regulatory element is SEQ ID NO:6.

25. The plant, plant tissue, plant seed, plant cell, or progeny therefrom according to claim 12, wherein the plant, plant tissue, plant seed, plant cell, or progeny therefrom is selected from the group consisting of potato, tomato, canola, corn, soybean, alfalfa, pea, lentil, other forage legumes such as clover, trefoil, forage grasses such as timothy, ryegrass, brome grass, fescue or other cereal grasses used for forage such as barley, wheat, sudan grass, sorgham.

26. The plant, plant tissue, plant seed, plant cell, or progeny therefrom according to claim 13, wherein the plant, plant tissue, plant seed, plant cell, or progeny therefrom is selected from the group consisting of potato, tomato, canola, corn, soybean, alfalfa, pea, lentil, other forage legumes such as clover, trefoil, forage grasses such as timothy, ryegrass, brome grass, fescue or other cereal grasses used for forage such as barley, wheat, sudan grass, sorgham.